OHIO ENVIRONMENTAL PROTECTION AGENCY 6961

DIVISION OF AUTHORIZATION AND COMPLIANCE
P.O. BOX 1049
COLUMBUS, OHIO 43216

19-5L46-0 /00143

FACT SHEET

APPLICATION FOR PDES PERMIT TO DISCHARGE TO OHIO WATERS

Public Notice No.

Application No.

1) Detrex Chemical Industries, Inc., Chlorine-Alkali Plant, Middle Road, Ashtabula, Ohio 44004, has applied for PDES Permit to discharge wastewater into the waters of the State of Ohio.

2a,b) This plant produces liquid chlorine, 50% and 73% caustic, and 15% sodium hypochlorite solution. The mandelic acid operation has been phased out and no consideration has been given to wastewater generated by this operation. This plant uses a standard industrial mercury type cell for the electrolytic decomposition of an acqueous solution of sodium chloride. Elemental chlorine hydrogen and caustic are produced. Liquid bleach is manufactured from "sniff" gas recovery by treating the chlorine gas with dilute caustic. Detrex discharges it's wastewater into the Union Carbide Drainage Ditch which flows into Lake Erie.

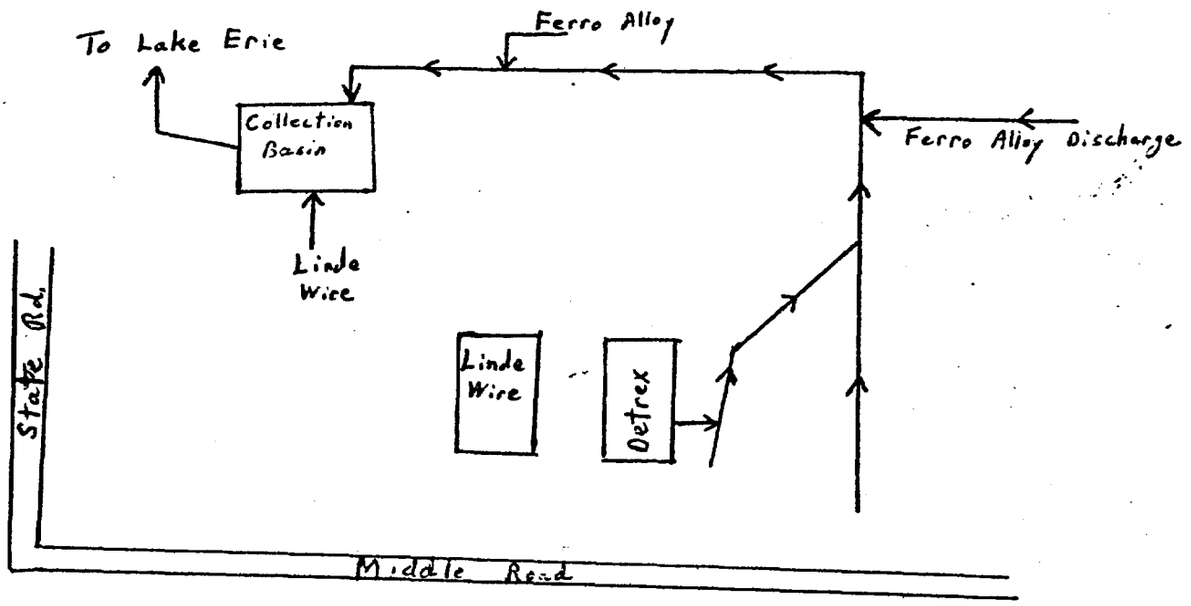
On the basis of preliminary staff review and application of lawful standards and regulations, the Ohio Environmental Protection Agency proposes to issue a permit to discharge subject to certain effluent limitations and special conditions. The proposed determinations are described more fully below.

The application, related documents, proposed effluent limitations and special conditions, comments received, and other information is on file and may be inspected and copied in Room 47K, 450 East Town Street, Columbus, Ohio 43216, between 8:00 A.M. and 4:00 P.M., Monday through Friday.

The proposed staff determinations are tentative. Persons wishing to comment upon or object to the proposed determinations are invited to submit their comments or objections in writing to the above address no later than _____, 1973. All comments or objections received prior to _____, 1973, will be considered in the formulation of final determinations regarding the application. If no objections are received, the Director will issue his final determinations within 60 days of the date of public notice. As described more

fully below, a public hearing may be held if response to public notice indicates significant public interest or if a formal petition is filed.

3)



4) Description of Discharge

Discharge at "Y", contains effluent from mercury treating system and cooling water used in-plant.

Average flow: 2800 gals./min.

Constituents:	mg/l	lbs./day
pH	6.5-11.0	
Mercury	.001-.005	.06
Oil & Grease		36.2
Chlorinated Hydrocarbons		52 lbs./day

5) Proposed determinations:

The Ohio Environmental Protection Agency has examined the above application. On the basis of applicable effluent limitations and water quality standards the Ohio Revised Code, as amended, and regulations issued thereunder, the Ohio Environmental Protection Agency proposes to issue the applicant a permit to discharge subject to effluent limitations and certain other conditions. The following is a brief description of the proposed effluent limitations and special conditions:

(1) Proposed Effluent Limitations:

Discharge at "Y": visible foam and visible floating solids prohibited. The following discharge constituents shall be limited as follows:

Constituents	mg/l	lbs/day
pH	6 - 8.5	
~~Settleable Solids~~	~~0.3 ml/l~~	
Suspended Solids	15	81
~~Dissolved Solids (Avg.)~~	~~500~~	
~~Dissolved Solids (Max.)~~	~~750~~	
Mercury	0.002	.06
~~Oil and Grease~~	~~10~~	~~10~~
~~Chlorinated Hydrocarbons~~		20
~~Zinc~~	~~1.0~~	
~~Copper~~	~~1.0~~	
~~Nickel~~	~~1.0~~	
~~Cadmium~~	~~0.005~~	
~~Lead~~	~~0.05~~	
Free Chlorine	0.1	

(2) Proposed Schedule for Compliance:

With the closing of the mandelic acid plant, no further problems with chlorinated hydrocarbons will be present, also oil and grease problems should be eliminated. ~~Careful operation and maintenance should bring this company's operation into compliance with effluent restrictions. Therefore, no compliance schedule is proposed.~~

(3) Proposed Special Conditions:

No special conditions have been imposed outside of the sampling frequency and testing procedures. All other normal conditions have been imposed, these include; maintenance and operation, yearly summary reports, impact statement, annual operating budget, reporting of spills, approval of change which effects character of wastewater.

(6) Applicable effluent limitations and water quality standards.

The following are the effluent limitations and water quality standards which were applied to applicant's discharge in the formulation of the above proposed determinations.

1) The mercury limitation of 0.002 mg/l is the present level adapted by the ~~Region V Effluent Guideline~~ suggested guidelines.

2) The chlorinated hydrocarbons limit of 20 lbs/day is taken from the Federal Draft Special Conditions.

3) pH range of 6 - 8.5 is adopted from the Federal Draft Special Conditions.

4) All other restrictions are being implemented from State of Ohio effluent guidelines.

10.51 16.0 / 00147

COMPANY NAME Detrex Chemical Industries, Inc.

COMPANY'S LOCATION Chlorine - Alkali Plant, Middle Road, Ashtabula

COUNTY Ashtabula

MAILING ADDRESS Detrex, Chlorine Alkali Plant, P.O. Box 670, Ashtabula, Oh

Significance of Action (Item 1)

TABLE 1

Discussion of Limitations and Implementation Schedule

PERSONS CONTACTED	TITLE	RESPONSIBILITY FOR WASTE TREATMENT
Robert Malloy	Plant Manager	Plant Manager-Overa
John Kehm	Plant Engineer	Equipment-system respons.
Dennis Ahlstrom	Plant Chemist	Charge of analysis

TABLE 2

Proposed Effluent Limitations & Implementation

PROPOSED EFFLUENT LIMITATIONS	COMPANY REACTION TO EFFLUENT LIMITATIONS AND COUNTERPROPOSAL Narrative only
pH 6.0 - 8.5 Mercury 0.005 mg/l Suspended solids 15 mg/l or 81 lbs/day Oil and grease 10 ppm or 10 lbs/day Chlorinated Hydrocarbons 20 lbs/day Dissolved Solids 500 mg/l avg, 750 max	→ Company doesn't believe can be reached on day to day operating basis
THOSE APPEARING IN TABLE 1 DOCUMENT 1	ADVERSE REACTIONS

PROPOSED IMPLEMENTATION SCHEDULES	COMPANY REACTION TO IMPLEMENTATION SCHEDULE AND COUNTERPROPOSAL
Submit Report	
R & G	

Items 4-5

Characterization of Limitations and Schedules

Are the Proposed Orders precedent setting or of unusual interest? Yes

If so, explain This is first permit for inorganic chemicals industry

In your estimation will the industry appeal them Probably

Are the orders in conflict with any local state etc., planning

If so, explain

Needed Information

Item 1

Compliance with Previous Permit

Attach copy of previous permit as Appendix A

Did company comply with all conditions Yes

If not specify and explain

Item 2

Nature of Company

Company manufactures Chlorine, 50 and 73 % Caustic, Commercial Bleach

Raw materials Water and sodium chloride

Manufacturing process Standard industrial mercury cell for chlorin caustic production, concentrating process for caustic, liquefy Cl

Production rate Caustic, 135 tons/day; Bleach, 35,000 gals/wk

No. of employees 80

Shifts per week 21

Approximate plant area

Approximate area under roof

Approximate paved area

Age of plant ≈ 10 years

Item 5
Toxins on Company Property

Did company submit response to toxin resolution Yes

If so attach copy to this Appendix C

If not, obtain list from company and attach as Appendix B.

Item 9
Raw Industrial Waste Load

Attach copy of administratively complete Corps of Engineers form if available as Appendix B to describe raw waste load.

If administratively complete application is not available proceed as follows:

Did company submit a C of E application_____

If so, do data in it accurately depict present and foreseeable operations_____

If so, attach copy of C of E forms as Appendix__

If the company did not submit a C of E permit form or states that the data on it no longer apply, request the company to submit an application that accurately refl the volume and characteristics of the raw waste load. Aside from the C of E permits there is little data available for many companies in their reports on raw waste loads. If such is available, list it in tabular form and attach as Appendix C. If it is not available and if your technical judgment tells you that the raw waste load whatever it is, can be amply treated to produce an acceptable effluent, the finalization of this fact sheet should proceed. If it appears that the treatment system is overloaded so as to make it impossible to achieve the desir water quality, and there is no data on the raw waste load, inform the company that the permit cannot be processed until such data are made available and discontinue.

Is the raw waste load being diluted by clean water No

By storm run-off water No

If so describe extent, effect and discuss practicality and desirability of separating these waters from the waste treatment system_____

Items 6-7

Attached Corps of Engineers application may be used for item 6 entries. Appendix E

	City	Well	Stream	Lake	Private Co.
Volume used	¼ million ft³/month				110 million/month
Water supply quality					
pH					
SS					
DS					
Color					
Odor					
Turbidity					
Total Hardness					
Other significant properties Water Cost	2 45¢/100 ft³				
Type of in-plant treatment of water					
Method of Disposal of sludge or brine					

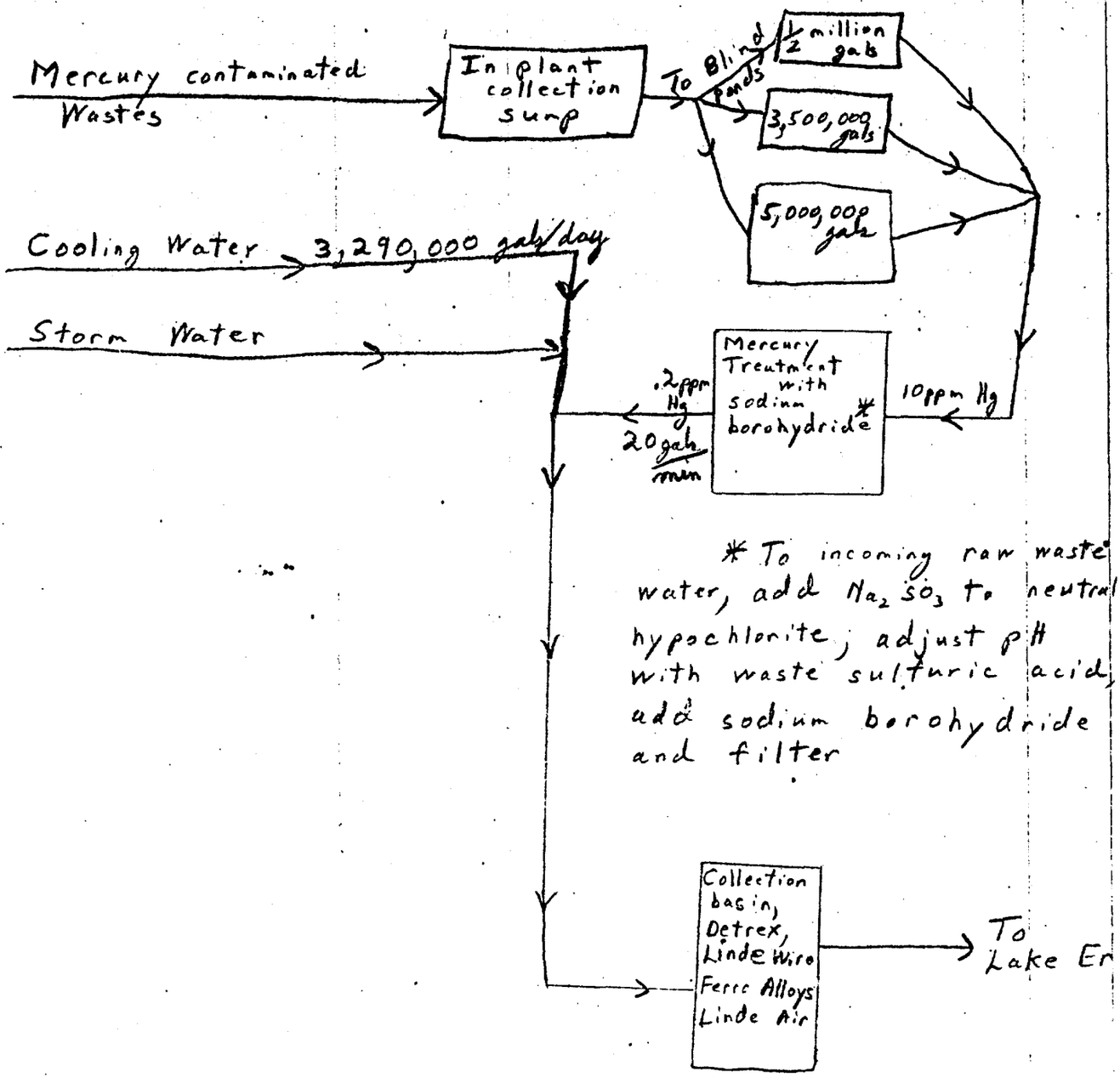
Uses of Water

	Type used	Volume used
Sanitary		
Potable		
Indirect Cooling		
Steam, Power Plant		
Manufacturing process		
Direct contact with materials in process		
Equipment, facilities cleaning		
Gas cleaning or conditioning		
Refrigeration, Air conditioning		
Steam Jet, etc.		
Other-Specify		

Item 8
Industrial Waste Treatment Facilities

Draw block diagram to show flow collection, treatment and disposal facilities indicating major items of equipment(lagoons, clarifiers, filters, aerators, digesters, etc.) and typical volumes and compositions with respect to significant of raw wastes, chemical additions, and effluents. If sanitary waste is integrated with industrial show this too.

Block Diagram of Waste Treatment Facilities



Item 10

Present Effluent Characteristics

Continuous Discharges. (From Company records for past 2 mos.)

(This and the data should be supplied by Surveillance)

		001		002 002		003	
		Monthly		Monthly		Monthly	
Month	Mgd	Average	Max.	Average	Max.	Average	Max.
December	3.45						
November	3.33						
October							
September	4.0						
August	3.8						
July	3.8						
June	4.0						
May							
Apr. 1	3.4						
March							
February							
January	3.3						

1972

Examine the analytical date for these outfalls and answer the following questions.

Which if any may be dismissed as sources of pollution_____

Briefly state why_____

(For the remainder execute the following table which is a monthly tabulation of the average and maximum concentration of synificant components of these outfalls).

Outfall	[illegible] Avg	[illegible] Min/Max	Susp Solids Avg	Susp Solids Max	[illegible] Avg	[illegible] Max	[illegible] Avg (ppb)	[illegible] Max (ppb)	Avg	Max	Avg	Max	Avg	Max	Avg	Max
[illegible]	7.95	7.2/9.0	1	2			3.75	5.0								
[illegible]	8.3	6.9/10.7	1.5	2			3.25	4.0								
							3.0	5.0								
[illegible]	7.3	6.8/7.8	1	1												
[illegible]	7.4	7.0/8.0	1	2			2.6	4.0								
[illegible]	8.85	7.9/10.7	1.5	2			2.75	3.0								
[illegible]	9.15	7.7/11.2	1.5	2			2.25	3.0								
[illegible]	7.8	7.1/8.7	1.5	2			2.5	3.0								
[illegible]	7.7	7.4/8.3	2	2			3.4	4.0								
[illegible]	7.4	6.8/8.0	1	2			3.4	4.0								
[illegible]	7.5	7.3/8.0	1				3.0									

(Using the data in this table and the data in the preceding table showing average and maximum volumes, execute the following table

[illegible] ascertaining [illegible] other significant components (Specify)

Hal	Suspended Solids Avg	Suspended Solids Max	BOD Avg	BOD Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
✓																
1																
✓																

Non Continuous Discharge

(The[illegible] [illegible] [illegible], CT [illegible], tank, lagoon discharge, [illegible], [illegible] discharge, etc, which are intermittent in nature)

Source of Discharge								
Frequency								
	Avg	Max	Avg	Max	Avg	Max	Avg	Max
Duration,								
Volume per discharge								
Treatment								
Discharge to (Specify [illegible])								

Composition of Non Continuous Discharge to State Waters.

	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
pH												
	Avg	Max		Avg	Max		Avg	Max		Avg	Max	
SS												
DS												
BOD												
COD												
Other (Specify)												
Other (Specify)												
Other (Specify)												
Other (Specify)												

Loading Attributable to Non Continuous Discharge (lbs/[illegible] discharge)

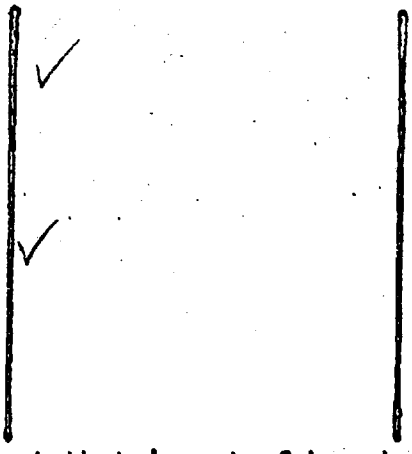
	Avg	Max	Avg	Max	Avg	Max	Avg	Max
SS								
DS								
BOD								
COD								
Other Specify								
Other "								
Other "								
Other "								

Item 11

Evaluation of Existing Industrial Waste Treatment Facilities

On the basis of average effluent volumes and strength and where applicable on critical stream flows these waste treatment facilities are inadequate or adequate to meet the following criteria:

	Adequate	Inadequate
USEPA Draft Special Conditions		
USEPA Effluent Limitation Guidelines	✓	
Ohio Water Quality Law		
ORSANCO Standards		
Mahoning River Standards	✓	
Other (specify)		
Other (specify)		



Where inadequate indicate the property or component that is out of bounds in the column headed Inadequate.

On the basis of maximum flows and concentrations occuring in the past 12 months, have there been instances where any of the above criteria been violated Yes.

If so specify:

pH has occasionally been high, up to 11.0.

Mercury has run over .002, but not over 0.005 mg/l our state standard from the Mahoning River, proper operation should reduce figure to 0.002 mg/l

Sanitary Waste Treatment Facilities

Item 12

Does any of the industrial waste generated by this facility go to municipal systems? No

If so is pretreatment provided _____

If so what pretreatment facilities are in operation _____

Characteristics of Waste to Municipal Systems

	Before Pretreatment	After Pretreatment
Volume		
pH		
SS		
DS		
BOD		
COD		
Other (Specify)		
" "		
" "		
" "		
" "		

What is sewerage fee for discharge in industrial waste to municipal system ____

(in industrial complexes only)

How is sanitary waste treated; discharged to the Union Carbide, Linde Wire sanitary treatment plant

Where is sanitary waste disposed _____

Characteristics of Sanitary Waste

	treated	untreated
Volume gpd		
pH		
BOD		
SS		
DS		
Res. Cl		
% BOD Reduction		
%SS reduction		

Item 13

Evaluation of Sanitary Treatment Facilities

Septic Tank-Leach Field

Age of installation Not applicable

Frequency of solids removal _____

Approximate last date of solids removal _____

Problems with system in past 3 years _____

Is design adequate to handle loading _____

If not indicate short comings _____

_____

_____

_____

Item 14

Effect on Receiving Streams

Name of receiving stream Lake Erie

Critical flow of receiving stream Not Applicable

	Upstream	Outfalls	Downstream
Volume		001 002 003 004	
pH			
SS			
DS			
BOD			
DO			
Toxicity			
other			
other			
other			

Refer to appendix B, Army Corps Permit attached for map and location of outfalls